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ADDRESS

TO THE

ROYAL GEOGRAPHICAL SOCIETY OF LONDON;

Delivered at the Anniversary Meeting on the 22nd May, 1848,

By W. J. HAMILTON, Esq.,
PRESIDENT.

Gentlemen,—In conformity with the practice now for some years established by my predecessors in this Chair, I proceed to lay before you a statement of the progress made in geographical knowledge during the past year. And although it may, perhaps, appear that the results have hardly equalled our expectations, and that the amount of geographical discovery falls short, in some respects at least, of that made during former periods, I think you will agree with me when I say, that much has been done both by our own countrymen and by foreigners to mark the epoch we are now celebrating as one not altogether devoid of interest or novelty, and as one which will add fresh laurels to those who have already distinguished themselves in a career in which they may be justly called the pioneers of an enlightened civilization.

But before proceeding to those matters which form the main feature of my task, I must detain you for a short time, while I refer to those amongst our associates whose loss we have to lament, who have more particularly distinguished themselves by their exertions in the field, or their less active but not less meritorous investigations in the closet.

Obituary.

We have to lament the loss of three distinguished foreign honorary members of our Society—Count Gråberg of Hemsö, Major-General Visconti, and Professor Magnussen of Copenhagen. In the two former we have, I regret to say, lost two of our most valued and useful correspondents. From them we were in the habit of regularly receiving the most correct and detailed information of the progress of our science, or of whatever related to it, from Florence and from Naples.

Count James Gråberg de Hemsö was born at Gannarfve, in the Swedish island of Gothland, the 7th of May, 1776. After receiving an excellent education from his father, President of the Court of Appeal in Gothland, he entered the merchant service at the age of 16, and visited England, Portugal and America. In the year 1793 he served on board a British man-of-war, and in 1794 commanded a gunboat at the capture of the fort of Calvi in Corsica. When about to obtain the rank of Lieutenant he was obliged, in consequence of a duel, to leave the service, and retired to Genoa. In 1800 he was attached to the Swedish Legation, in Italy, as Private Secretary to M. de Laggerswärd, and devoted himself to his favourite studies of statistics, mediæval history, ethnography, and philology. He then became Swedish Vice-Consul at Genoa, and in 1815 was appointed Secretary to the Consulate at Tangiers. In 1822 he was compelled to fly from Tangiers, and to take refuge in Gibraltar; in 1823 the King of Sweden named him Consul at Tripoli, but not meeting with the support he expected from his own Government, he obtained permission, in 1828, to retire from his post and to reside in Florence, where he had remained since that period, devoting his time to the pursuit of his favourite studies, amassing a valuable and extensive library, and writing memoirs on the different subjects connected with his studies. A catalogue of his works, published in 1837, thus enumerates 112 distinct performances:—Works printed separately, 27; poetical works, 8; academical memoirs, 15; articles in periodicals and journals, 62. These were written in no less than eight different languages, viz., Italian 76, French 24, English 4, Latin 3, Swedish 2, German, Portuguese, and Arabic, 1 each. Amongst these numerous works I may mention his 'Annali di Geografia e di Statistica,' full of useful and curious information, and his 'Specchio del imperio di Marocco,' the result of a residence of six years at Tangiers. Many papers by him are to be found in the 'Memoirs of the Geographical Society of Paris,' and in the seventh volume of our own Journal is an interesting communication from him, with a vocabulary of names of places, &c. in the empire of Marocco.

General Ferdinand Visconti was born at Palermo in 1772. Whilst still at the military college he was arrested and confined, without any accusation, in the dungeons of Pantellaria. Although liberated in 1801, he was obliged to fly to Milan, where he entered the corps of engineers, and rapidly distinguished himself. He was charged by the Emperor Napoleon with the construction of a new large military and administrative map of Lombardy. The materials placed at his disposal were so imperfect that he was compelled to begin by fixing for himself the latitudes and longitudes of numerous places. In 1810 he accompanied General Danthouard into Tyrol, to fix the boundaries between Bavaria and the kingdom of Italy. In 1814 he returned to Naples, where he was placed at the head of the Bureau Topographique, which he soon placed on a sound scientific footing, and on the return of Ferdinand IV. from Sicily was confirmed in his office. In 1820 he was nominated by the Hereditary Prince to the Provisional Junta of the Constitutional Government. On the return of the King with the Austrians, he resumed his office of Director of the Bureau Topographique, but was dismissed in 1822, being subsequently restored in 1826, after several years' residence in France and other countries. His principal works were the map of the kingdom of Italy, already mentioned, in 7 sheets, a hydrographical map of the Adriatic in 22 sheets (a work of great merit), and subsequently the topographical map of the environs of Naples, besides several others commenced before he was dismissed in 1822.

Professor Magnussen, of Copenhagen, was well known as the President for many years of the Society of Northern Antiquaries.

Amongst our own countrymen our losses have been unusually numerous. Even within the last few days we have to lament the loss of Lord Ashburton, who, although not distinguished as a geographical writer, will ever be remembered for having settled the most important geographical question of modern days—a question respecting which every public and private depository of maps and charts was ransacked for information, and on the solution of which the peace of nations was at one time supposed to hang. I need not say that I allude to the question of the boundary between the Canadian possessions of Great Britain and the United States.

We have also to deplore the loss of the Earl of Powis, the Marquess of Bute, Admiral Sir Robert Stopford, Sir James Annesley, Colonel Barnewell, Colonel Brandreth, a member of the Council of this Society, Captain Shirreff, and many others.

Amongst the really practical men of whose services we have been deprived, I must particularly notice Lieut.-Colonel Henry R. Brandreth, who had only recently been elected a member of our Council. He was born in 1794, and, after receiving an excellent military education, was employed, on receiving his commission, in the Engineers at Chatham, and in the survey of England. He was afterwards actively employed on foreign service for many years. In 1825 he was appointed by the Duke of Wellington to erect iron barracks in some of the West Indies, In 1829 his employment under the Admiralty began. During the subsequent years he served as a Commissioner under the Reform Boundary Act and the Municipal Corporations Act, and on various other important services. In 1836 he was appointed Director of the Architectural and Engineering Works of the Admiralty. This office he held for ten years, to the great benefit of the public service, and received a letter of thanks from the Board of Admiralty, when, in 1846, he was appointed to a seat in the new Government department called 'the Railway Board,' which he held until the period of his death. He has left some very valuable papers respecting most of our colonial possessions, in which he was employed at various times.

Sir Grenville Temple was well known for his geographical and antiquarian researches in the Mediterranean, and especially on the coast of Africa. In 1835 he published a small work, in which he has recorded the results of his investigations.

Sir James Annesley was a physician of some celebrity in the East India Company's service. He published some valuable works on the botany of India, and on the diseases of tropical climates.

Mr. W. Wittich was another of our members whom we have lost. Amongst other works which he has published I may mention his series of the 'Curiosities of Physical Geography,' in which he has described some of those natural phænomena which characterise particular portions of the earth's surface, such as icebergs, glaciers, trade-winds, monsoons, deserts, &c. These volumes were published in 1845. He was also the author of a work on Canada conjointly with Mr. G. Long, and contributed many, if not most, of the articles on geography to the 'Penny Cyclopædia.'

We have also to record the loss of Captain Grover, one of the most zealous promoters of the chivalrous enterprise of the Rev. Dr. Wolfe to Bokhara to investigate the fate of two gallant officers. The investigation, it is well known, terminated in the conviction of their assassination by the orders of a barbarous chieftain. But Captain Grover's efforts in the cause of humanity are not the less deserving of our admiration, and of being recorded as one of the most meritorious acts in the life of the gallant officer.

Mr. Hatchett was a Fellow of the Royal Society, and a distinguished chemist. For many years he was an intimate friend of Sir Humphry Davy, and many of his memoirs have been published in the 'Philosophical Transactions.'

OUR OWN LABOURS.

In noticing the communications which have been read at our evening meetings during the past season, it will be unnecessary for me to detain you long, as many of them will be published in the ensuing number of the Journal, which I trust will soon be ready for distribution amongst the members of the Society.

The remarkable features of the country surrounding the Dead Sea, and the still more remarkable depression of the surface of its waters below the level of the Mediterranean, could not fail to attract the attention of Dr. Robinson, the author of 'Biblical Researches in the East,' who, arguing on the strength of certain data which he assumed to be correct, and which, it is but fair to state, he derived from the Journals of this Society, has, in a paper lately read before the Society, expressed his doubts as to the conclusions to which the scientific travellers who have lately visited that country have come; but it would appear, that instead of questioning the fact of the depression of the Dead Sea, the data on which he had relied were incorrect. In the first place, he has assumed that the statement that the Lake of Tiberias is only 328 feet below the Mediterranean is correct; and, secondly, that the distance between the points where the Jordan leaves the Lake of Tiberias, and where it enters the Dead Sea, is only 60 miles. These facts, if correct, would certainly give a fall of about 16 feet in every mile of its course. This is the principal point on which Dr. Robinson founds his objection to the assumed depression of the Dead Sea. The fact, however, is, according to the most authentic measurements, viz., those of Dr. Russegger and of M. von Wildenbruch, the Prussian Consul, that the depression of the Lake of Tiberias is much more considerable than has yet been supposed, being, according to the former, 625 French feet, and, according to the latter, 793 feet below the Mediterranean. Again, the distance between these two points is, according to Russegger, 20 German geographical miles, equal to 80 English, or upwards of 90 statute miles. Thus, according to these corrections alone, the fall of the Jordan between the two lakes is not more than 8 feet per mile; an amount of inclination really small when the nature of its bed is considered.

But on this subject we have had another paper by Mr. Petermann, a fellow of this Society, who, bringing to bear the information he has obtained in his hydrographical pursuits, respecting the average fall and inclination of rivers in the United Kingdom, has shown, in his paper on the fall of the Jordan and other rivers, that such a fall of 8 feet, or even more, is by no means unusual even in this country.

The fall of the Tweed in Roxburghshire and Berwickshire, during 53 miles of its middle course, exceeds 9½ feet per mile, and during the last 80 miles of its course, viz., from its confluence with Biggar Water to the sea, it has a fall of 605 feet, or nearly 8 feet per mile; and yet throughout this distance it has neither waterfalls, cataracts, nor rapids to prevent the navigation of small boats. Mr. Petermann's paper is full of information respecting the fall of rivers and the conditions influencing their fall. He also shows how deceptively the length of the course of a river is diminished in maps on a small scale.

Rear-Admiral Sir Francis Beaufort has communicated to us an interesting paper, drawn up by the late Lieutenant Molyneux, of H.M.S. Spartan (forwarded to him by Captain Symonds, commanding that vessel, and by whom the expedition of Lieutenant Molyneux was set on foot), giving a full account of the journey undertaken by him for the purpose of sounding the Lake of Tiberias and the Dead Sea, and of exploring the intervening portion of the valley of the Jordan. His account of the valley between the two lakes bears directly on the question of the fall of the Jordan, although he was unable to complete the inquiry in consequence of his boat having been attacked and plundered by the Arabs. It is evident, however, from his account of the winding nature of the river-bed, the shallows with which the boat had to contend, and the many weirs over which it had to be carried, that the fall must have been very considerable during the first portion of the voyage. In one place, soon after entering the Jordan, we are told that for 7 hours there was not water to float the little dingy for 100 yards together. On another occasion he says, "There are in the upper part of the river many *hundreds* of places where you might walk over, without wetting your feet, on large rocks and stones." As therefore the now corrected data only give a fall of 8 feet per mile, we may, I think, safely credit the statement that the depression of the Dead Sea is, as has been stated, at least 1340 feet below the Mediterranean. Lieutenant Molyneux does not appear to have made any observations on this point. The other portion of Lieutenant Molyneux's paper gives an account of his proceedings in sounding the Dead Sea, in which, notwithstanding his difficulties and the absence of his English sailors, he succeeded in getting three casts with his deep-sea lead, in those places which appeared to him to be the deepest portions of the lake. These casts were as follows—225, 178, and 183 fathoms. The Lake of Tiberias is comparatively shallow, the deepest soundings not exceeding 20 to 26 fathoms. I regret to have to state that this gallant officer died, soon after his return to his ship, from the combined effects of climate and over-exertion.

Two communications have been read respecting the discovery of coal on the western shores of Australia, about 4° N. of Perth and the Swan River. The first of these is an account of an expedition undertaken by Messrs. Gregory, for the purpose of examining the country to the E. and N. of Toodgay, and of ascertaining the general trend of the waters to the eastward of Lake Brown. They succeeded after a long journey in discovering two good seams of coal in the bed of what they supposed to be the river Irwin. The second is an account by Lieutenant Helpman, R.N., commanding the colonial schooner Champion, of an expedition to examine this coal, of which they brought away several cwt. He discovered a snug harbour protected by a natural pier of coral, very useful for small coasting vessels, which was named Port Grey; it is near the mouth of the river Chapman and Champion Bay.

Subsequent investigations seem to point out an error in the nomenclature of the rivers, and other positions on this coast, and to show that in fact the river called the Irwin in these communications, is really the Arrowsmith. This error seems to have been occasioned by the Messrs. Gregory finding a river in the same latitude as that in which the Irwin was placed by Captain Grey, on his rapid journey after being wrecked in Gantheaume Bay, when he exaggerated his distances in the first part of his journey, bringing all the rivers too far S. All these points will be made clear in the new map of the western coast of Australia, about to be published by Mr. J. Arrowsmith.

A memoir by Mr. Duncan has also been read, detailing his journey from Abomey, in the kingdom of Dahomey, to Adafoodiah, in the interior. The substance of this paper has been incorporated in the work published by Mr. Duncan, which I shall hereafter mention.

From another of our members, Mr. F. Ayrton, we have had an interesting paper, entitled 'Observations upon M. d'Abbadie's Account of his Discoveries of the Sources of the White Nile, and on certain Statements and Objections by Dr. Beke.' In this paper, which I trust will be shortly printed in our Journal, the author endeavours to show that there is more probability of correctness in the statement of M. d'Abbadie as to the position of the sources of the White Nile, than in the assumption of Dr. Beke that they are to be looked for two or more degrees to the S. of the Equator. This position the author endeavours to prove by several arguments drawn from the physical character of the country, its history, and its nomenclature. He points out that the Mountains of the Moon, σεληνης ορος, in which, according to Ptolemy's account, the White Nile rises, are the Gebel el Qamar of Arabian geographers, and he identifies this name of Qamar, Qomr, or

Qomri, &c., with Gamaro, the name of the district of Abessinia in which, according to M. d'Abbadie, the Nile rises. He shows satisfactorily, from the nature of the trade in ancient times and its distribution between Arabs and Greeks, that the Greeks would naturally obtain their information respecting inland parts of Abessinia, then lately conquered by the Arabs, from the Arabs themselves. Again, arguing from the facts that owing to the rise and inclination of the river the chief source of the White Nile must be amidst high mountains, and that the clouds and moisture brought up by the S.W. monsoon are condensed on the high mountains of Inarya and Kaffa, he shows that there cannot exist S. of these mountains any loftier range, because, if so, it would have intercepted the moisture and rain of the monsoon ; and he further shows that, as in a tropical climate, no great river could take its origin except amidst a lofty mountain range, we have no authority for looking for the sources of the Nile in a district where it is shown no elevated mountains can exist.

You have also lately heard read a memoir by Mr. Leigh, giving an account of a visit to the river Zambesi, on the eastern coast of Africa. The author gives an animated description of the town of Quilimane and the habits and manners of the inhabitants, a mixture of negro and Portuguese, apparently very favourable to the encouragement of the slave trade; he also describes the scenery of the neighbourhood and the low banks of the marshy sluggish river.

Mr. M'Queen has lately communicated three papers to the Society. One is an itinerary by a Moorish merchant, named Hamed Essagheen, who had travelled seven times from Tripoli to Kano, detailing a caravan route from Ghraat to Kano, which had occupied 67 days. Mr. M'Queen considers this itinerary very valuable, as fixing the position of several important places in this part of Africa, explaining doubts and correcting errors. The other two communications were by Lieut. Barker and Lieut. Cruttenden respectively, two gallant officers of the Indian navy. That by Lieut. Barker contains an account of the islands of Mushahk, Tajourah, Zeylah, Berbera, and other places along the northern coast of the great eastern horn of eastern Africa, outside the straits of Bab-el-Mandeb, and also some details of their inhabitants, with accounts of the principal places in the interior, as Hurrurh, near the Galla country, a town said to possess great advantages for penetrating into the interior.

Lieut. Cruttenden's paper relates to a more eastern and southern portion of the same country. He describes the Somali and other tribes, and the peculiarities of the port of Berbera, where the great annual mart is held, and where the natives bring down vast quantities of gum, frankincense, &c., from the rich valleys of the interior, to exchange for the produce of Europe and of India. In the western portion of the country coffee is very abundant; to the eastward the coffee vanishes, and the hills produce so great an abundance of gums, that the author thinks the *regio thurifera* ought properly to be looked for in this direction. Upwards of 1500 tons of gums are said to be exported in one year, and great facilities for trade are said to exist.

EUROPE.

In proceeding now to narrate the progress of our science during the past year, I shall I think best consult your convenience by giving to the various subjects which I have to bring under your notice a certain geographical order, arranging them, as well as the works in which they are described, rather according to the countries to which they relate, than to those from which the expeditions have proceeded, or in which the works have been published.

HOME SURVEYS.

The progress of the surveys of our own coasts has proceeded with all the rapidity and zeal compatible with the calls which have been made on the service for the use of the vessels for other important duties. No less than six of these vessels were last year detached from their ordinary service for the purpose of conveying food to the districts on the west of Ireland suffering under the pressure of famine and distress.

The Ordnance Survey has also made considerable progress, and a survey of London, to be constructed on a very large scale, has been commenced.

Ireland.—Captain Yolland, R.E., has published an account of the measurement of the Lough Foyle base, in Ireland,—a very important feature in the Ordnance Survey of that country.

CHARTS, MAPS, AND ATLAS.

Among the charts lately published by the Hydrographical Office, I would particularly mention the two sheets of Arctic America, on which are laid down the recent discoveries of Dr. Rae. We have also received charts of several of the islands in the Greek Archipelago, and of the harbours on the coast, amongst which, one of Boodroom, the ancient Halicarnassus, is particularly deserving of attention. Several charts of the coast of England, Scotland, and Ireland have also been published during the past year. Mr. Arrowsmith has also given us a map of the discoveries of the Hudson's Bay Company's Arctic Expedition to the North of Repulse Bay, conducted by Dr. Rae, in 1846 and 1847, showing in connection the discoveries made by Parry, Ross, Back, and the Company's expedition conducted by Dease and Simpson in 1838 and 1839.

PHYSICAL GEOGRAPHY.

Berghaus' Physical Atlas.—I am happy to be able to announce the completion of the beautiful edition of 'Berghaus' Physical Atlas,' by Mr. Alexander K. Johnston, of Edinburgh. The three last parts have just been published, and will no doubt add considerable interest to the study of physical geography, the importance of which is hardly yet fully appreciated by the public. The value of the maps contained in these last numbers has been increased by the addition of an excellent coloured Geological Map of the British Isles, by Professor Ed. Forbes; and although the colouring may be said to be somewhat bright, it conveys a vivid impression of the varied nature of the stratification intended to be represented.

To those who may be deterred by the price from availing themselves of this useful work, I am glad to announce the appearance of the first number of a similar work brought out in a cheap form, and probably containing, on a small scale, most of the information to be met with in the larger work. It is called 'A Descriptive Atlas of Astronomy and of Physical and Political Geography,' and professes to embrace the latest information and most recent discoveries in astronomical and geographical science. The maps will be accompanied by descriptive letter-press, and will consist of three series:—1. Astronomical maps; 2. Physical Maps; and 3. Political maps. The contents of the first number are—a map of Africa; a meteorological map of the world, showing the distribution of the temperature of the air; and, thirdly, a celestial planisphere, or map of the heavens. The physical maps will be constructed by Mr. Petermann, to whom I have already alluded, and who was formerly in Professor Berghaus' geographical establishment in Potsdam.

Mrs. Somerville.—I am happy to be able to announce the publication of an interesting work in two small volumes by Mrs. Somerville on Physical Geography. The importance of this subject renders it the more satisfactory that it should have been taken up and treated by a writer already so well and so favourably known. The graphic style and manner in which the different branches of the subject, not in themselves new, have been arranged and discussed by Mrs. Somerville, will, I trust, make her unpretending volumes universal favourites: I must therefore content myself with a very brief and rapid notice of their contents.

Commencing her work with a masterly sketch of the geological features of the world's history, Mrs. Somerville describes the successive formations which constitute the crust of the earth, and the different systems of animal life which have successively prevailed upon the surface,—altered, modified, and adapted as that life has been to meet the constantly varying conditions in which it was to exist. These various periods, with their respective organisms, are rapidly but clearly described, and we are brought to the termination of the tertiary period, when the earth had obtained nearly the same state and form with regard to the distribution of earth and water as prevails at present. The vast continents, mountain-ranges, and elevated table-lands of Europe and of Asia and of Africa are then described, with all their peculiarities of form and temperature ; and crossing the Atlantic, we are made to survey with a rapid glance the Andes and the mountains of Brazil, and then to pass over the deserts of Patagonia, the pampas of Buenos Ayres, the silvas of the Amazons, and the llanos of the Orinoco and Venezuela.

Nor are the peculiar characters of the frigid North less graphically described. The inhospitable regions of Greenland and the Polar Seas, and the volcanic phænomena of Iceland contrasted with its perpetual snow and never-ending glaciers, are ably brought out : and after describing the Australian continent, the Indian Archipelago, with the atolls and coral reefs of various kinds, and the thousand isles of the Pacific, the theory of alternate areas of subsidence and elevation is discussed ; and our author adds, " There are strong reasons for believing that a continent once occupied a great portion of the tropical Pacific, some part of which subsided by slow and imperceptible degrees. As portions of it gradually sank down below the surface of the deep, the tops of mountains and table-lands would remain as islands of different magnitude and elevation, and would form archipelagos elongated in the direction of the mountain-chains."

There is nothing improbable in this suggestion. That the form of the earth's crust has been modified and altered by the effect of volcanic phænomena, and the consequences of the periodical escape of elastic gases generated within the earth by the action of a central heat, is a principle now universally admitted. Proof is not wanting that the lofty Andes have been elevated to their enormous height by slow and gradual processes within a comparatively recent period ; and it may easily be demonstrated that where detached portions of the earth's crust have been raised by means of these subterranean forces acting only on one extremity of a given mass, the other extremity would necessarily be proportionally depressed.

Quitting the important agent of fire, as exhibited in earthquakes and volcanoes, in modifying the earth's surface, the other agent, water, is no less forcibly discussed, as developed in the numerous river systems of the world, and in the mighty ocean itself, its tides, its currents, and its waves.

The second volume is chiefly devoted to a consideration of the animal and vegetable life distributed for the various and specific purposes to which they are adapted, over the different continents and waters of the globe. The peculiar faunas and floras of the great divisions of the earth, and of their different climates and temperatures, are spread out before us with a clear and concise generalization ; and the whole subject concludes with an account of the distribution and condition of man—the last in the order of creation, as he is the first in order of intellect of all created beings on our globe. His physical and moral conditions are discussed, as well as his mental influence on others of his own race, and the empire he exercises over all around him. The progress of civilization and the moral improvement of his character hold out the hope that no retrograde movement is now possible, and "the diffusion of Christian virtue and knowledge ensures the progressive advancement of man in those high moral and intellectual qualities that constitute his true dignity."

England.—Mr. A. K. Johnston has also published a new Commercial and Industrial Map of England, Wales, and part of Scotland, showing the lines of Railways completed and in progress, in four sheets, 1847.

He has also published a Map of Geographical Terms, to accompany which our late Secretary, Colonel Jackson, had written a glossary, which has been published within the last few days.

Mr. T. W. Saunders has published, during the last year, a geographical Catalogue of all Globes, Atlases, Maps, and Plans which he has for sale. The list at present is chiefly British; it might with advantage be extended so as to contain notices of more foreign maps.

France.—We have received during the past year a valuable collection of charts from the Depôt de la Marine at Paris, consisting of not less than 117 charts: 12 of these, published during the past year, relate to the expedition of the Astrolabe, under M. Dumont d'Urville, to the South Pole and Oceania, comprising the Sandwich and Philippine Islands, the east coast of New Holland, the Caroline Islands, the islands of the Pacific, New Guinea, Tasmania, &c. We have also four charts of various ports on the coast of Africa, several sheets of the coast of France, the Straits of Singapore, &c.; also a considerable portion of the course of the Amazon from its mouth upwards, published in 1846.

Geographical Positions.—From the table of geographical positions by M. Daussy, extracted from the 'Connaissance des Temps de 1848,' we learn that many additions and corrections have been made this year in the positions of several important places. In France the general triangulation of 1844 has led to many corrections. The longitude of Dublin has been considerably modified, in accordance with the latest Admiralty Charts. In Germany, New Holland, and the Antilles, some modifications have also been made, from better and more recent information.

Laguillermie.—I cannot avoid calling the attention of the Society to some curious and ingenious maps constructed by M. Laguillermie of Paris. These maps are so shaded as to bring out the convexity of the spheroid in all parts—that portion to which each map specially refers being placed in the centre, and consequently least shaded and least distorted; the other portions, being naturally foreshortened, are more distorted, and can only be studied in the different sheets of the Atlas. In short, these spherical maps of M. Laguillermie are intended to give an idea of the appearance of the earth as seen from different points without it. M. Laguillermie has presented a series of these maps to the Society.

Jomard.—M. Jomard has prepared for publication a work under the title of 'Monuments of Geography,' intended to form a collection of maps of the middle ages. The first portion of the work consists of an introduction, with plates of celestial globes, and others relating to cosmography, an Arabic astrolabe, &c. The more geographical portion consists at present of 30 plates, amongst the oldest of which are—the map of the Scheryf El-Edrisi; an itinerary of a pilgrimage from London to Jerusalem, taken from a MS. copy of the Chronicles of Matthew Paris, of the thirteenth century; the famous Venetian map of the brothers Pizzigani, with the date 1367, preserved in the library of Parma. It is said that the whole work will contain at least 100 documents of this description.

M. Walchenaër, perpetual secretary of the Académie des Inscriptions, has recently published two maps of France, one of which is specially intended to point out the numerous features of physical geography, the other to illustrate the comparative geography of ancient Gaul.

Italy.—Your attention was called by my predecessor last year to the changes taking place in the height of the edge of the crater of

Vesuvius, as compared with a fixed point (the Punta del Palo), which for upwards of half a century had been the culminating point of the outer circumference. It appears from a letter addressed to M. Arago by M. Amante, that the burning cone, which on the 27th of February, 1846, was 9·5 metres *below* the Punta (the height of the Punta being 1203 metres), had been gradually rising, and on the 5th of July, 1846, was 1219·5 metres, consequently 16 metres *above* it; but on the 16th of August, 1847, the cone had reached the height of 1240 metres, viz. 37 metres above the Punta.

Sardinia.—Several additional Numbers (56 to 70 inclusive) of the 'Dizionario Geografico-Statistico Commerciale degli Stati di S. M. il Re di Sardinia' have been published since our last anniversary.

Belgium.—M. Vandermaelen has published 6 more sheets of the map of Belgium, on a scale of $\frac{1}{80000}$. He has also commenced the publication of a large topographical map of Belgium, in 250 sheets, and on a scale of $\frac{1}{20000}$. The execution of these maps seems in every way equal to their importance.

Kosmos.—The translation of the second volume of the 'Kosmos' of Baron A. von Humboldt has appeared since our last meeting. It must become a universal favourite. In many respects it occupies a different field from that of its predecessor. While the first volume was chiefly directed to a comprehensive sketch of the phænomena of the outward physical world, this second volume is rather directed to the consideration of the influence of outward nature on the mind of man, and of the effect thereby produced in modifying the feelings and advancing the civilization of the human race. The work is divided into two parts:—First, the incitements to the study of nature; and, second, the history of the physical contemplation of the universe. There is a strength and a simplicity, and at the same time a truth pervading all the observations in this work, which cannot fail to charm. Who does not feel, and at the same time cherish, the force of such a remark as the following, in alluding to the impression made on the mind by groups of exotic plants in hothouses or in the open air?—" I have already appealed on this subject to my own youthful experience, when the sight of a colossal dragon-tree and of a fan palm, in an old tower of the Botanic Garden at Berlin, implanted in my breast the first germ of an irrepressible longing for distant travel." What do we not owe to that old dragon-tree and fan palm!

But I have only room to quote a concluding paragraph:—" I approach the termination of a comprehensive and hazardous undertaking. More than two thousand years have been passed in review, from the earliest state of intellectual cultivation among the nations who dwelt round the basin of the Mediterranean and in the fertile river districts of Western Asia, to a period the views and feelings of which pass by almost imperceptible shades into those of our own age. I have sought to present the history of the gradually developed knowledge and recognition of the universe as a whole, in seven distinctly marked sections, or, as it were, in a series of as many distinct pictures. Whether any measure of success has attended this attempt to maintain in their due subordination the mass of accumulated materials, to seize the character of the leading epochs, and to mark the paths in which ideas and civilization have been conducted onwards, cannot be determined by him who, with a just mistrust of his remaining powers, knows only that the type of so great an undertaking has floated in clear though general outlines before his mental eye." Alex. von Humboldt may safely appeal to the verdict of the universal world.

Austria.—Professor W. Haidinger has published, in 1847, a notice intended to accompany his geognostic map of the Austrian monarchy in nine sheets, explaining the sources from which his information was derived.

Germany.—Professor von Oeynhausen has published at Berlin, during the last year, a large geognostical and orographical map of the neighbourhood of the Laacher See in the Lower Eifel, in eight sheets. This map extends from Brohl to Lahnstein from N. to S., and from Mayen to Ems from E. to W.; it is on the large scale of $\frac{1}{25000}$, or about $2\frac{3}{4}$ inches to the mile. It is extracted from the cadastral map of the Rhine provinces, and is accompanied by an explanatory memoir by the same author.

Amongst the many maps which have lately appeared in Germany, I may mention a geological map of Hesse-Darmstadt, published by Becher, in which the different formations are represented by printed colours; Spruner's historisch-geographisch Hand-Atlas, published at Gotha, consisting of 73 coloured maps; Sieder's map of Germany, the Netherlands, Belgium, and Switzerland, with a classification of mountain chains, in 25 sheets; a map of the course of the Oxus, by Zimmerman; and an atlas by Sydow.

Norway.—Captain Roosen of the Engineers, in Norway, has presented to the Academy of Sciences a geographical map of Norway, with a MS. memoir on the physical geography of that country.

Sweden.—Maps of the Crown-Prince.—I cannot omit to notice the maps of part of Sweden executed by the Crown-Prince, and exhibited by Count Rosen to the meeting of the British Association at Oxford. One of these maps represents the physical features of the country in a scale of colours, a dark-green tint being used to represent all parts of the country less elevated than 100 feet above the sea; another represents, also by a scale of colours, the extent of the wooded districts and their relative ages; on a third map are marked all the mining districts, the mines themselves being marked by dots of colours; the route by which the ore is conveyed to the blast furnaces, and the ports, being indicated by lines of the same colour.

A map by Colonel Löwen was also exhibited at the same time, showing the amount of population in different districts varying from 500 to 15,000 per square mile. This was also done by the use of different colours.

RUSSIA.—*Petschora.*—Count Keyserling, one of the companions of Sir R. Murchison in his Russian travels, has lately published a work entitled 'Scientific Observations on a Journey into the Petschora Country.' By this work much additional information is gained respecting the great north-eastern angle of Russia in Europe, which is watered by the river Petschora. Count Keyserling's attention being chiefly directed towards the geology of the district, the geographical and astronomical duties were intrusted to M. von Krusenstern, of the imperial navy. My remarks must be confined to the latter portion of the work. In this respect the principal results obtained have been the fixing the latitudes and longitudes of from 45 to 50 places by means of chronometers and circummeridional altitudes of the sun, and laying down the course of the rivers by constant observations of their daily track recorded in a regular nautical log-book. M. von Krusenstern has thus been able to give a full account of the geography and hydrography of the Petschora country.

The boundaries of the Petschora country are stated to be, on the E. the Ural; on the W. the Timan mountains, a slightly elevated range of hills forming the watershed between the confluents of the Petschora and those of the Mesen, the Wymm, and the Wytschegda; on the N. the Polar Sea; and on the S. the Upper Wytschegda and the Upper Petschora, with their confluents. The space contained within these limits is calculated to be about 6500 geographical square miles.

M. von Krusenstern fully describes the different people and races by whom this vast district is inhabited, together with their trade and commerce. Fishing is their principal occupation, the produce of which they exchange with the traders for corn from the more southern regions of the Volga. This, however, on account of the difficulties of transport, fetches a high price in these arctic regions. The communications are chiefly kept up by rivers, with short *portages* from one to the other. Many parts of the country are studded with small lakes, showing a striking uniformity of character with some of our own possessions in the northern regions of the American continent. The great wealth of the country consists in its vast forests, chiefly of larch. These are of increasing value for ship-building, as timber for such purposes is beginning to be scarce in the government of Archangel. The different river systems of the district, together with all their confluents, are then systematically described. We are still led by Count Keyserling to expect appendices on the structure of the country, together with notices on its physical condition, natural history, and statistics.

Northern Ural.—It was announced in the Address from this chair last year, that the Russian Geographical Society was about to dispatch an expedition of discovery to examine the northern portion of the Ural mountain chain. Considering the investigation of the vast and hitherto unknown districts of its own country as the chief object of its exertions, its attention was at once directed to the north-eastern portion of European Russia, rather than to the more distant regions of Siberia, viz., to the northern Ural district, a country in a scientific point of view less known than almost any other. Having come to this determination, it was most liberally assisted by the imperial treasury. The boundaries of the district to be surveyed are, on the N. the Arctic Ocean, on the E. a line drawn from Bogoslowsk to Beresow, and from thence along the Ob as far as its embouchure; and on the W. a line beginning on the Korotaicha, then following the Ussa and the Petschora, and afterwards running along the Kolwa and Wyschera towards Bogoslowsk. Some idea of the nature of the expedition may be formed by stating, that its most southern point is in the latitude of Tscherdyn, about 62° N. The exploring party left Tscherdyn on the 30th of May in two divisions. The only accounts which have reached this country are from Colonel Hoffmann, the chief of the expedition, dated the 15th of July O.S., from the sources of the Petschora.

The chief results then reported were that M. Kowalski had fixed by astronomical observations 24 points; the topographer, M. Jurjew, had traced the course of the Wyschera from Tscherdyn to its sources, and the direction of the mountain-chain from thence to the sources of the Petschora. M. Branth had made a large collection of objects of natural history. With regard to the physical geography of the country Colonel Hoffmann says—"The long-extended mountains with conical summits are separated by valleys of no great breadth, and scarcely reach the height of 3000 feet; their flanks are well wooded, but the ridges are bare and covered with loose broken stones." It was proposed that the expedition should occupy two years: we shall await its results with interest and anxiety.

Erman.—The name of Adolph Erman has been so often mentioned in this Society in terms of admiration and of praise, that I cannot omit alluding with satisfaction to the fact that Mr. Cooley has published a translation of his work 'Reise um die Erde,' under the title of 'Travels in Siberia including excursions northwards down the Obi to the polar circle, and southwards to the Chinese frontier.' You will remember that in 1843 the Council awarded a gold medal to Professor Erman for his extensive geographical labours. On that occasion Sir R. Murchison entered fully into the merits of his works; I will, therefore, now only observe, that the scientific position of Adolph Erman, and the interest attaching to the physical and geographical characters of the country through which he travelled, and of which we are still so ignorant, impart a value to Mr. Cooley's undertaking, only inferior to that which attaches to the 'Kosmos' of Humboldt. While the one has described in vivid terms of reality the charms and wonders of the tropical and equinoctial regions of America, we are here no less forcibly arrested by the wild yet picturesque description of the roaming Samoyede, and the wealth and comforts of the Yakuts in a climate which at first sight seems hardly compatible with human existence: but I must refer you to the volumes themselves to appreciate their merits.

Mr. Cooley informs us that he has ventured to abridge the original in the earlier portion of the work, viz., the journey across Europe from Berlin to Tobolsk. He has thus been enabled to give, in two volumes and without curtailment, the more novel and interesting part of the author's narrative in Siberia.

Hoffmann.—Professor Hoffmann has recently published an account of his journeys in former years to the gold-washings in eastern Siberia. The work will be found to contain much interesting information for the geographer and the geologist. He was sent by the Government to investigate the geognostic character of the gold-works of Siberia. The results, already published in Russia, but without the geographical details of his journey, were particularly alluded to by Sir R. Murchison in his Address from this chair in 1844, and therefore require less notice at my hands on the present occasion. The chief locality of this Siberian el Dorado is in the vicinity of Irkutsk, westward of the Lake of Baikal, and on the northern flanks of the Sagan mountains, the eastern prolongation of the Altai. The land in Siberia belongs to the crown, but permission is granted to private individuals, under certain conditions, to search for gold. The result is very uncertain. Professor Hoffmann gives a striking sketch of the difficulties to be overcome by the Siberian gold-searchers. "The whole country in which the gold-washings are situated is one universal *taiga*, or district covered with primæval forests, only slightly peopled by nomadic hunting tribes, to whose tents there are no roads, and which is only rarely visited in the winter by the foot of a Russian fur-hunter. The moisture of the atmosphere has almost everywhere converted the soil into a morass, extending from the marshy valleys to the summits of the mountains, and in which both man and beast sink deep in crossing it. Spots of grass and pasture are very rare amidst the mossy covering. The gold-searchers, separated from villages many hundred wersts, must carry all their provisions with them, which can only consist of dry and salt food. What with sleeping on wet moss, constant rain, digging in the morass, they never have their clothes dry; add to this the constant fatigue in sinking the pits, which are scarcely ten feet deep before they are filled with water; this must be pumped out, while the labourers, standing deep in the mud, carry down the shaft to the underlying rock, the only means of ascertaining that they have not neglected any gold-sand stratum." Many pits are sunk in vain, and a district is often abandoned in despair in the immediate neighbourhood of the precious object of search. Moreover, the adventurers are often overtaken by the winter's snow before they have time to extricate themselves from this wooded labyrinth.

Tradescant.—From Russia we have also lately received an interesting work from the pen of Dr. J. Hamel, member of the Imperial Academy of Sciences at St. Petersburg, entitled 'Tradescant the Elder, in Russia, 1618,' in which the author gives a full account of the origin of the commerce between England and Russia, with an analysis of the earliest travels in the North, and of the voyages of discovery round the North Cape to Archangel, by which that commerce was first established. The name of Tradescant is well known as the founder of the first museum of natural history in this country, which became the nucleus of the Ashmolean Museum. The most interesting portion of the volume is the account given by Dr. Hamel of his discovery, during his stay in this country, of a MS. in the Ashmolean Museum, marked No. 824—XVI., and entitled 'A Voiag of Ambassad (to Russia), undertaken by the Rt. Honorable Sir Dudlie Diggs in the year 1618, &c.' Dr. Hamel proves satisfactorily, from internal and collateral evidence, that this MS. is the work of John Tradescant himself, of whom no writings were hitherto supposed to exist, and who thus appears to have accompanied Sir D. Diggs as naturalist to the expedition. I trust that some of our antiquarian or publishing societies will undertake the publication of this rare work, one of the earliest accounts we have of a voyage embracing scientific objects.

ASIA.

I shall now proceed to state the progress of our science in the more tropical regions of Asia.

Bosphorus.—M. Hommaire de Hell, who quitted Paris last year with the intention of examining the country to the east of the Caspian Sea, and near the lake Aral, has sent home an interesting statement respecting the levels of the Bosphorus, published in the Comptes Rendus. From a series of observations made with great accuracy, he concludes that there is no appreciable difference of level between the Black Sea and the Sea of Marmora; consequently that there is no real current flowing out of the Black Sea through the Bosphorus. He supposes all the apparent currents to be entirely owing to the action of the winds; and, as the north winds are the most prevalent, the apparent and the most constant current flows towards the south. This, however, he supposes to be compensated for by the strong currents flowing to the north during the southerly winds. M. Hommaire de Hell subsequently proceeded from Trebizond to Diarbekir, through Kurdistan, and thence to Tabriz (here called Tauris) by Betlis and Lake Van. Many sites have been fixed by observations of altitude and compass bearings. I may here mention that M. Hommaire de Hell's former work, entitled 'Travels in the Steppes of the Caspian Sea, the Crimea, the Caucasus,' &c., has been translated into English, and published in the 'Foreign Library' of Chapman and Hall.

Asia Minor.—The discoveries of our associate, Sir Charles Fellowes, in Lycia, and adjacent parts of Asia Minor, must be in the recollection of my hearers. We are informed that the results of his several expeditions into that country are about to be recorded in a permanent manner by the publication of a work by Mr. George Scharf, illustrating the Xanthian marbles, and the scenery of Xanthus itself. The engravings will be accompanied by descriptive letterpress by Sir C. Fellowes.

M. Tchihatcheff, the distinguished Russian geographer and geologist, continues his explorations in Asia Minor. In a letter to M. Elie de Beaumont, recently published, he has given an account of the discovery of extensive beds of emery in the western portions of Asia Minor, particularly between the ruins of Stratonicea in Caria, and Smyrna.

Col. Lapie has completed a Map, in six sheets, comprising the countries situated between the Ægean Sea and the Indus, viz. Asia Minor, Armenia, Syria, the banks of the Euphrates, Persia, and Bokhara.

Syria.—Amongst the works which have been published since our last anniversary, giving additional information respecting the ancient and modern geography of the East, I must not omit to notice the volumes of Dr. Wilson, entitled 'Lands of the Bible.' It is true that most of the localities he visited have been already described, yet something new is always to be gleaned in such countries as these, by every successive traveller who employs his time and his eyes as industriously as Dr. Wilson, and who enjoys, as he did, the advantages of understanding the language of the people, and of entering into the spirit of the manners of the East. But I can only cursorily allude to a few of the new points he has established. In crossing the Peninsula of Mount Sinai we have an account of the discovery of ancient Egyptian mines not far from the celebrated Valley of Mukatteb, and much interesting detail respecting the Wadi Arabah and its neighbourhood, the localities of Petra, and the inhabitants of the surrounding districts. Dr. Wilson does not sanction the theory of the Wadi Arabah having been the channel by which the waters of the Jordan escaped previous to the destruction of the cities of the plain; he considers that the elevation of the Wadi Arabah to its present height, simultaneously with the depression of the valley of the Jordan and the bed of the Dead Sea, argues a greater convulsion of nature than we have any authority for assuming. In Palestine itself there is much of novelty and interest in Dr. Wilson's narrative; I may mention his visit to the Dead Sea, and his notice of an island on its waters, not mentioned by many travellers, and which he cautiously suggests may have been a mass of floating bitumen. He subsequently visited the sources of the Jordan at Dan Banias and Hasbeiya, respecting which we have some interesting details. We have also a full account of the curious Assyrian sculptures and cuneiform inscriptions on the rocks near the mouth of the Nahr el Kelb, or ancient Lycus. The work is illustrated by numerous maps and plans. The map of the Holy Land is founded on the excellent one of Kiepert, executed under the direction of Carl Ritter, and embraces, as Dr. Wilson observes, all the improvements, modifications, and additions which the observations and inquiries of himself and companions had suggested.

Arabia.—I have also to announce the publication during the past year of two more volumes of Carl Ritter's 'Universal Geography,' forming the eighth volume of Asia, and the sixth of Western Asia.

These volumes are entitled 'The Comparative Geography of Arabia,' and fully deserve the same praise and commendation already bestowed on their predecessors, for patient investigation and the collection of an immense mass of information. The history of the Peninsula of Arabia, from the earliest times down to the conquests of Mahomed, occupies the first chapter, this is followed by its subsequent history down to the present time, and by a full account of its geographical condition in the middle ages. The geographical description itself is divided into—1st, an account of the coast of Arabia bordering on the Persian Gulf; 2nd, the interior of Oman; 3rd, the oceanic southern coast of Hadramout and Aden; 4th, the western coast of the peninsula of Arabia along the Red Sea—this is the most elaborately worked out portion of the work, treating fully of Yemen, Hedjas, Mecca and Medina, &c.; and 5th, the interior of the peninsula and the country of the Wahabites. The work concludes with an Appendix giving an account of the geographical distribution of some characteristic products of Arabia. These are the distribution of the coffee-tree in the old world, both in its wild and cultivated state, as well as its introduction to the civilization of the Eastern and Western worlds. The camel and the date-palm, in their original state, and subsequent application to the service of man, are also fully discussed.

Peninsula of Sinai.—An interesting notice has been published in the 'Bulletin de la Société de Géographie,' detailing the travels of Professor Lepsius in the Peninsula of Sinai; it is accompanied by a map, pointing out the true position of Mount Sinai and Horeb, according to the views of Professor Lepsius. It is impossible to read this memoir without being struck by the learning and erudition which the Professor has brought to bear upon the subject, and the talent with which he maintains the views he has adopted.

Arabia.—A new Map of Arabia is announced in the 'Bulletin de la Société de Géographie,' corrected down to the last year from the most recent surveys and explorations. M. Jomard assures us that the greatest care has been bestowed on its construction.

Assyria.—Important discoveries have been lately made on the banks of the Euphrates and the Tigris, and particularly amidst the ruins of ancient Nineveh, in connexion with which the names of M. Botta and Mr. A. Layard have been brought so frequently before the public. Mr. Layard has rendered a great service to archæology by the many monuments of antiquity he has rescued from destruction. Besides those already arrived in this country, two or three hundred cases are now waiting the means of transport at Bombay or in the Persian Gulf. Mr. Layard is about to publish an account of his researches and his discoveries in ancient Assyria. During the nine years this gentleman has been travelling in the East, much of which time he spent amongst the Druses, he must have been enabled to collect a considerable amount of valuable geographical information.

Indian Surveys.—During the last year, an account of the measurement of two sections of the meridional arc of India, extending from lat. 18° 3′ 15″ to 29° 30′ 48″, by Lieut.-Col. Everest, late Surveyor-General of India, has been published by order of the Court of Directors of the East India Company. It is intended to publish the first sections of the arc, which were measured by Lieut.-Colonel Lambton, uniform with the above. Lieut.-Col. Waugh, the Surveyor-General of India, is preparing to extend a series of triangles over the Punjab; he will start from one of the sides of the meridional arc. The triangulation of Bengal is proceeding satisfactorily; several parties are engaged on different meridians between that of Karora and Calcutta. A base of verification has been measured ere this in the neighbourhood of Darjeeling. A trigonometrical series is being carried on from Calcutta along the sea-coast to Ganjam. Several parties are also engaged on revenue and topographical surveys of the Bengal provinces. The triangulation of the Bombay presidency has been completed as far as the 20th degree of north latitude. Sheets 67 and 68 of the Indian Atlas have been published, and also new editions of sheets 47, 48, 49, 65, and 66.

Marine Surveys.—A Chart of the N.E. coast of Africa, from Cape Gardafui westward towards the Red Sea, by Captain Carless, I.N., is in the hands of the engraver, and will be published shortly. The survey of the Coromandel coast is progressing satisfactorily under Lieut. Fell, I.N.; as is also that of the coasts of Malabar and the Konkun, under Lieut. Moutrion, I.N. When these surveys are completed, nearly the whole coast, extending from Cape Gardafui round the Red Sea, the Persian Gulf, Hindostan, Arracan, and Tennasserim, will have been laid down by the officers of the Indian navy.

India.—We learn from public papers that an Archæological Society has been established at Delhi, and that, extending their researches beyond the limits of their own district, by the aid of the late Governor-General, they were about to explore the newly-discovered ruins of Ranode, in Scindiah's territory.

The publication of Baron Hugel's Map of the Punjab and Cashmere has been at last effected. I cannot avoid expressing a regret that this valuable work should have been so long delayed.

A Map of Bombay and the adjacent district has been published on a large scale, by the Great Indian Peninsula Railway Company, exhibiting the lines surveyed in detail and explored by that Company. Should the Companies established for the purpose of introducing railways into India succeed in their important schemes, we may look forward to much information in the cause of physical geography, from the detailed surveys of the country which they must institute, and the close examination they must make of the various features which constitute the character of the Western Ghauts and the elevated plateaux from which the great rivers of Hindostan, such as the Godavery, the Kistna, the Tapty, and the Nerbuddah, take their rise.

And here I cannot omit to notice the interesting volume of Dr. Hoffmeister detailing his travels in Ceylon and continental India, including Nepal and other parts of the Himalayas to the borders of Thibet, with appendices, addressed to Baron Humboldt, on the geographical distribution of coniferæ on the Himalayan Mountains, on the vegetation and on the birds of the Himalayan Mountains. Dr. Hoffmeister travelled with Prince Waldemar of Prussia, and we are reminded by Carl Ritter, in a brief introduction, that the talented author was unable to complete the work himself, having fallen at his Prince's side on the battle-field of Ferozepore.

Assam.—We have obtained some additional information respecting the productions and geographical features of Assam by the publication of the work of an officer in the Bengal Native Infantry, during the last year. The natural capabilities of the country, both for growing tea and cotton, and collecting gold from the washings in the rivers, seem hitherto to have been completely marred by the insuperable indolence and viciousness of the inhabitants.

Chinese Tartary.—From India we have received accounts that an exploring expedition has been undertaken by the Indian Government, from which we may expect much valuable information respecting the countries north of the Himalayas, and extending to the frontiers of Chinese Tartary. The expedition, consisting of Captain Cunningham of the Engineers, Lieutenant Strachey, and Dr. Thompson, started from Simla about the 10th of August last. They were to proceed along the upper valley of the Sutlej, traversing the Himalaya range by the Nitec Ghaut. After tracing the junction of the eastern and northern branches of the Sutlej, they were to proceed northwards towards Yarkand, wintering at Khoten. The following season they were to proceed eastwards in different detachments, meeting again at Lassa—Lieutenant Strachey tracing the upper course of the Indus to Garoo, proceeding thence to the Lake of Mansarowara, which he already visited in 1846, and then exploring the course of the Sanpoo, to ascertain whether it falls into the Bramahputra or the Irawadi. At the same time Captain Cunningham will keep a more northerly course from Khoten to Lassa, and will endeavour to penetrate into the territories of the Celestial Empire. The expedition is well provided with instruments of all kinds necessary for astronomical observations, and for the extension of geographical knowledge.

It is impossible not to hope for great and valuable results from such an undertaking; and it is matter of congratulation for the science of geography that the Indian Government have thus resolved to avail themselves of the services of some of their servants most distinguished for their scientific attainments, not only to develope the resources of their own territories, but to explore those of their more immediate neighbours.

China.—From the last annual report on the progress of geography by M. Vivien de St. Martin, we learn that the two intrepid missionaries, MM. Huc and Gabet, who had penetrated to the furthest extremities of Thibet, and had even reached Lassa, had been compelled to return to Canton over land. We are led to expect a full account of this remarkable journey, and look forward with much interest to the details it will contain of the almost unknown country through which they passed.

Mr. Thomas Taylor Meadows, interpreter to Her Majesty's Consulate at Canton, has published a work called 'Desultory Notes on the Government and People of China, and on the Chinese Language.'

Captain Forbes has also published a work entitled 'Five Years in China, from 1842 to 1847; with an Account of the Occupation of the Islands of Labuan and Borneo by Her Majesty's Forces.' In both these works will be found much information respecting the manners of the Chinese, their habits, and their customs.

And here I would wish to call your attention to a curious geographical document presented to the Society by Mr. E. O. Smith, viz. a native geographical map of China, brought from Nankin by Mr. William Houghton, R.N. Although in its general form strangely distorted according to our views of geographical proportions, it may yet be useful in pointing out the relative positions of places. At all events it is interesting as showing the state of geographical knowledge among the Chinese.

Java.—A very beautifully executed map of Java has been lately published by V. der Velde in two sheets. The information on which it is constructed has been obtained from official documents, and it is accompanied by an explanatory memoir.

Borneo.—The interest connected with the island of Borneo, since the philanthropic enterprise of Sir James Brooke was brought under the notice of the public by the volumes of Captain Keppell, describing the operations of Her Majesty's ship Dido while employed, in cooperation with the Rajah of Sarāwak, in suppressing the piracy of the

Malays, has been so great that no less than three works on Borneo have been published during the last year.

The first contributor to our knowledge of Borneo, and the proceedings of Sir J. Brooke, appears in Mr. Low, for some time secretary to the Rajah of Sarāwak. His volumes contain very valuable information respecting the natural history and mineral productions of Borneo, particularly in the neighbourhood of Sarāwak; and as his pursuit carried him far into the interior, we find much geographical information in his interesting pages. In an ethnological point of view, also, his work deserves honourable mention, as containing many details respecting the character of the Malay and Dyak tribes.

Mr. Frank Marryat, formerly midshipman on board the Samarang, has published a work containing many drawings of the peculiar scenery of Borneo and the Indian Archipelago, as well as of the costumes and arms of the inhabitants.

And, thirdly, we are indebted to Captain Rodney Mundy, R.N., for editing the interesting Journals of Mr. Brooke, full of new matter, both geographical and ethnological, and valuable not only for the details they contain of his progress in Borneo and Celebes, and the manner in which he gradually established his influence in that country of his adoption, but also for the insight they give of the high motives by which he was actuated. Every page is suggestive of reflections, and breathes an affectionate sympathy for the Dyaks of the East, no less than for the social happiness of his native land. Captain Mundy has added to the value of these volumes by appending a Journal of his own proceedings, with some details of the geography, geology, and natural history and productions of Borneo.

Indian Archipelago.—During the past year we have been gratified with the publication of Sir E. Belcher's Narrative of the Voyage of Her Majesty's ship Samarang during the years 1843, 1844, 1845, and 1846, when employed in surveying the islands of the Eastern Archipelago. After visiting Borneo his attention was first directed to the islands lying off the coasts of China, which were examined in the following order:—The Bashees, Meia-co-shimahs, Luzon, Mindoro, Mindañao, Sooloo, Borneo, Celebes, and Ternate. After again touching at Borneo, the Samarang revisited Sooloo, Manilla, and Hong-Kong, with the Bashees, Meia-co-shimahs, Loo-Choo, Quelpart, Korea, and Japan; then returning by Loo-Choo and Hong-Kong, and by Manilla and the Mindoro Seas to Mindañao, and to our old possession of Balambangan, they carried out the complete survey from that island to Labuan, revisiting Sarāwak and Singapore. The volumes are full of geographical and ethnological details, and their value is increased by the publication of Mr. Adam's notes on the natural history of the countries visited by the Samarang. I must also mention Mr. Jukes' work, giving an account of the proceedings of the Fly, chiefly employed in surveying the coast of New South Wales, under Captain Blackwood, R.N., whom you have this day elected a Member of the Council.

AFRICA.

Egypt.—Directing our attention to the lands of Africa, I have to announce that Mr. Joseph Bonomi has published a small map of ancient Egypt under Antoninus Pius, A.D. 140. This map is confined entirely to the representation of the ancient geography of the country, and will be found a useful aid to the classical student and to the comparative geographer.

M. Jomard has presented to the French Academy a map of Arabia and the surrounding countries, prepared by himself, to illustrate the history of Egypt under Mehemet Ali.

M. Saint Preuve has, in a memoir addressed to the French Academy of Sciences, called in question the accuracy of the levelling of the Isthmus of Suez by the engineers of the Egyptian expedition. The comparative levels of the ocean and of the Mediterranean have also been noticed by him; and considering the physical importance of the correctness of such a statement, M. Saint Preuve has recommended that the work should be repeated. M. Rochet (d'Hericourt) is about to undertake this task, and new instruments have been made for him by M. Brunn.

Abessinia. — *White Nile.* — Amongst the important information which we have received during the past year, few subjects have attracted more attention than the announcement, in the 'Athenæum' of Oct. 9, by M. Antoine d'Abbadie, that he and his brother had at length, after nine years of dangers, vexations, and difficulties, succeeded in ascertaining the source of the main stream of the Egyptian Nile—the White Nile, or western branch—which was supposed, according to a paper by Dr. Beke, lately published in our Journal, to exist two or three degrees to the S. of the equator. This announcement was the more gratifying in consequence of the absence of all communication from these enterprising travellers during the last three years. M. d'Abbadie states his conviction, founded on his own observations and on the testimony of many witnesses, as to the course of the river S. of the furthest point he reached, that the Gibé of Inarya, in lat. 34° 38′ E. and long. 7° 49′ N., is the real source of the White Nile. This account closely corresponds with that given by Dr. Russegger in his Travels in Abessinia, &c., vol. ii. p. 87. It would thus appear that the Gibé falls into the Godjeb, and that thence together flowing round the mountains of Kaffa and Gamaro, and turning to the westward, they fall into the Shoaberri of M. Arnaud. It is true that the whole course of these rivers has not yet been traced, and much also depends on the correctness of the statement made by some geographers, that the Godjeb forces its way through the mountains to the S.E., and falls into the Indian Ocean. This, if true, would at once disprove M. d'Abbadie's statement, but it hardly seems probable. It is, however, now the great point to make out, in the absence of the possibility of tracing the Gibé and the Godjeb to their final destination, either in the Indian Ocean or the White Nile. It would appear from M. Arnaud's statement, that the valley of the White Nile, after ascending nearly due S. as far as the third or fourth parallel of latitude, turns away towards the E., and then gradually bears away N.E., N., and N.W., until it finally reaches the sources about the seventh parallel of latitude. Several streams, bearing apparently the same name of Gibé or Gibbe, rise in this mountain district, the parent source of the Dedhesa, the Baro, and the Godjeb. We await with great anxiety further information on this interesting point.

M. Rochet (d'Hericourt), already well known for two journeys in the southern parts of Abessinia, is again preparing to penetrate into the country, and to traverse it from N. to S. After reaching Godjam, and crossing the Blue Nile, it was his intention to penetrate into Inarya and Kaffa. The French Academy have furnished M. Rochet with detailed instructions on several points of scientific interest, to which it was desirable he should direct his attention, and which I cannot avoid recommending to the notice of all future travellers. Those which are published in the Comptes Rendus, vol. xxv. p. 183, relate chiefly to magnetism and meteorology. They will, I am sure, be read with interest by those who are aware of the importance of such observations, and particularly of their bearings on the progress of geographical science.

Dahomey.—Another African traveller, Mr. Duncan, one of the survivors of the Niger expedition of 1841, has added to our knowledge of the interior of Western Africa by publishing a Narrative of his Journey from Abomey to Adafoodia, in 2 vols. 8vo., one of the most interesting portions of which is the account, from an eye-witness, of the death of the unfortunate Mungo Park.

There is one important conclusion which may be safely drawn from the remarks of Mr. Duncan, and which it is not altogether irrelevant to mention on the present occasion, viz. that there exists amongst the natives of this portion of Africa a strong desire to see introduced amongst them the advantages of a more extended commerce. With commerce will necessarily be united a more enlightened civilization, and this must lead at once not only to a more perfect and more intimate knowledge of the geography of this hitherto *terra incognita*, but will also tend to strike a more deadly blow at the African slave-trade than has yet been or ever can be effected by the most powerful fleet we might maintain in those fatal seas.

Sahara.—From Mr. James Richardson we have had two volumes lately published, giving an account of his travels in the Great Desert of Sahara in 1845–46, with a description of the oases and cities of Ghadames, Ghraat, and Mourzuk. These volumes are useful contributions to our knowledge of the interior of the imperfectly known regions of Northern Africa; and they describe some hundreds of miles of desert routes over which no Europeans had previously passed, as well as several of the cities of the Desert, of which we had not before received accounts from European visitors. From certain observations in the introduction we are led to expect the speedy publication of a large map of the routes of this part of Africa, as well as some reports on the commerce and geography of the Great Desert. From Mr. Richardson's knowledge of the languages of this part of Africa, of which he has published some vocabularies, we may look forward to much useful information on these subjects.

M. Raffenel, whose adventurous journey into the interior of Africa has been already mentioned from this chair, is still engaged in his arduous enterprise. According to the last accounts received at Paris from him, after resting some time at Bakel, a French Senegambian establishment in the country of the Sarracolets, this enterprising traveller had crossed and explored the Mountains of the Moon (so called). He proposed to penetrate into the inner desert, and would then direct his course towards Western Nigritia.

Mozambique.—Lieutenant Bernard has published an account of a three years' cruise in the Mozambique Channel for the suppression of the slave-trade. The narrative is chiefly devoted to the details of the principal object of the voyage, but it also contains some account of the towns on the coast, with the habits and manners of the natives, as well as a description of the interior of the country in the neighbourhood of Quillimane, the river of which is said to be navigable during the floods for 260 leagues.

South Africa.—M. Adolphe Delegorgue, of Douai, has published during the past year an account of his travels in South Africa, during which he penetrated from Fort Natal as far as the tropic of Capricorn, visiting the Amazoulian and Mohatisses Caffres, respecting whom, and the geographical features and natural productions of the country, he has brought back much valuable information.

Mr. Arrowsmith has published, during the past year, a map of the Eastern frontier of the Cape of Good Hope; and Mr. Charles Bunbury has given to the public an account of his residence at the Cape of Good Hope, in which the botany of the colony and the geographical distribution of its plants are fully and ably discussed.

AUSTRALIA.

I now come to that portion of the globe which embraces our Australian colonies, and here I find that Mr. A. K. Johnston has published a map of Australia Felix, or the district of Port Philip, compiled from the latest authorities up to 1847, extending from Adelaide to the Hunter river, on a scale of $\frac{1}{275,000}$.

Mr. Burnett, the deputy-surveyor of New South Wales, is reported to have traced the river Boyne to lat. 24° 53′ 50″, where it was strongly influenced by the tide, and to have ascertained that its outlet was in Harvey's Bay.

Maps.—I am glad to report that we may expect the publication of another sheet of Arrowsmith's map of Western Australia in a short time; as well as a new map of Eastern Australia, in six sheets, by the same distinguished geographer, who has also made considerable progress in a large map of New Zealand, in which many corrections are made in the positions of important places.

The extraordinary mineral treasures of the colony of South Australia will give a great impetus to its prosperity, and as a necessary consequence will lead to a great increase in our geographical knowledge of the adjacent territories. We are not therefore indifferent to the accounts which have been recently sent home of the newly discovered mines of copper and of lead in that part of the world. In the Burra-Burra copper-mines some of the ores are said to be almost pure copper. Lead has also been discovered in the mountain limestone between Macquarie Harbour and the territory of the Van Diemen's Land Company.

The past year has witnessed the publication of Sir T. Mitchell's journal of his expedition into the interior of tropical Australia in search of a route from Sydney to the Gulf of Carpentaria. This expedition was mentioned in the President's address from this chair last year, and the principal results have already been alluded to in papers and extracts read before the Society; although the expedition failed in its main object, we have here much information respecting the interior of the colony. It completes, moreover, as the author informs us, a series of internal surveys radiating from Sydney to the west, the south, and the north, which have occupied his chief attention during the last twenty years.

There is a fact connected with this journey, and bearing on the practicability of making rapid and correct surveys, which is worth recording. Sir T. Mitchell has stated in this room, that the whole of this journey was laid down from measurements with the chain, and that he had frequently had from 25 to 30 miles thus measured in one day. Although himself unable to trace the course of the Victoria to its mouth or other termination, Sir T. Mitchell looks forward with confidence to the success of Mr. Kennedy, his assistant, who has been dispatched from Sydney for the purpose of tracing the further course of the Victoria, and who he believes will ere long be heard of as having emerged on the Gulf of Carpentaria.

It may appear discouraging to express a doubt on this subject, but when we recollect Dr. Leichhardt's account of the rivers which fall from the south into the Gulf of Carpentaria, I cannot hesitate to recommend geographers not to be too sanguine as to the successful termination of this expedition.*

Dr. Leichhardt.—It was stated in the address from this chair last year, that Dr. Leichhardt was about to start on a fresh journey of exploration into the interior, proposing to traverse the whole centre of the Australian continent from Sydney to Swan River. His plans and arrangements were made with great judgment and care, and principally from his own resources. Besides horses and beasts of burthen, the expedition was well provided with cattle to ensure a proper supply of animal food. Cheered by the enthusiastic good wishes of the population, no less than supported by his own energy and dearly-bought experience, everything promised that his journey would be one of the most important ever undertaken in that colony, and, besides opening up tracts of useful land in the interior, would lead to much scientific information. It was therefore with great regret that we lately heard that, after reaching the Downs of the Upper Mackenzie and Peak Range, Dr. Leichhardt had been compelled by events over which he had no control to retrace his steps to Sydney. Nothing daunted, however, by his failure, this intrepid traveller determined again to attempt the solution of the problem, and to penetrate through the centre of the Australian continent. In the meantime he has not been idle, and while waiting for the proper season to make the necessary arrangements, he has been employed in making an excursion to FitzRoy Downs, for the purpose of examining the country between Sir Thomas Mitchell's track, and his own former route. He started on this expedition of the 9th on August last, and returned to Sydney about the beginning of October, having examined a considerable tract of country on the banks of the Dogwood Creek, the Balonne, the Colgoon, and the Condamine.*

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* Since the above was read, information has been received in England of Mr. Kennedy's proceedings. From this it appears that the Victoria was found not to go far northward from where Sir Thomas Mitchell left it; it then turns to the west; afterwards, for 120 miles, to south-west; and finally to south, where it is lost in a sandy, barren country, which Mr. Kennedy conjectures is the north-eastern limit of Sturt's desert. Mr. Kennedy advanced as far as latitude 26° 25′, when he was compelled by want of food and water to return. He thinks that the river will prove to be the Cooper's Creek of the latter gentleman. The country through which the Victoria flows is said to be barren and grassless.—June 1, 1848.

In Mr. J. C. Byrne's work, entitled 'Twelve Years' Wanderings in the British Colonies, from 1835 to 1847,' will also be found some geographical details of the country, and much information respecting the habits and customs of the natives of Australia. The colonies described are New Zealand, New South Wales, Australia Felix, Van Diemen's Land, South Australia, and Western Australia. The questions of emigration and colonization are fully discussed—questions intimately connected with the progress of geographical discovery, and therefore not altogether foreign to the objects which we have in view.

Antarctic Seas.—During the past year we have seen the publication of the work of Sir James C. Ross, giving an account of his Voyage of Discovery and Research in the Southern and Antarctic Regions during the years 1839, 1840, 1841, 1842, and 1843. The merits of Sir James Ross have been already so fully stated in this room on a former occasion, when the Council awarded him the gold medal for the discoveries he had made, that I am not now called on to do more than to record the fact of the publication of these volumes, by which the fame of our intrepid countryman (at this moment starting on a somewhat similar expedition, with the noble object of searching for a missing brother in arms and fellow-labourer in the arctic regions), will be more permanently established, and the details of his exertions and his discoveries will be made known to all the world.

AMERICA.

Leaving the Old World, to notice the progress of geography on the American continent, I find, in crossing the Atlantic, that, after a silence of 50 years, the volcano of the island of Fogo, one of the Cape de Verde Islands, has again broken forth, and that torrents of burning lava issuing suddenly from its seven craters have caused considerable ruin and devastation.

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* Dr. Leichhardt is reported to have again started on his great expedition across the Australian continent.

Arctic Sea.—Beginning at the northern extremity of the continent, I will mention that Leopold von Buch has published at Berlin a notice of Bear's Island, known also on English charts as Cherrie Island, situated in lat. 74° 80′, chiefly taken from the accounts of the Norwegian naturalist *Keilhau*, who visited it in 1827. This notice contains some remarks on the origin of glaciers, and some interesting observations respecting the temperature and meteorological phænomena during the winter. The S.W. winds brought rain in December; whereas with N.E. winds the island was surrounded by solid ice in June and July.

North America.—*Dr. Rae.*—During the past winter information was received that the expedition dispatched from Fort Churchill, in Hudson's Bay, in 1846, under the command of Dr. John Rae, for the purpose of surveying the unexplored portion of the Arctic Coast at the N.E. angle of the American continent, had returned. They succeeded in tracing the coast all the way from the Lord Mayor's Bay of Sir J. Ross to within a few miles of the Straits of the Fury and the Hecla; thus proving Sir J. Ross to have been correct in stating Boothia Felix to be a peninsula. Dr. Rae has since returned to this country, and from him full details have been received of the results of this interesting expedition. They left Churchill on the 5th of July, 1846, and proceeded to Repulse Bay, from whence they succeeded in conveying one of their boats into the Arctic Sea, west of the Melville Peninsula; this operation being facilitated by a chain of lakes which greatly reduced the portages and rendered easy the carrying of the boat. Having quitted Repulse Bay in lat. 66° 32′ N., they again reached the sea in lat. 67° 13′ N., and after tracing the coast some miles to the N.W. to about 67° 30′ N., they crossed over to Melville Peninsula.

The prevalence of northerly winds and the state of the ice proving that the survey could not be completed this season, Dr. Rae determined on returning to winter at Repulse Bay, and preparations were accordingly made to build a house for the long cold winter, and to lay in a sufficient store of provisions, consisting principally of reindeer and salmon. With the exception of what was used for cooking their provisions, they passed the whole winter without fuel; the lowest temperature experienced being 47° below zero.

On the 5th of April they again started north, and on the 8th had advanced seven miles beyond Cape Lady Pelly. On the 18th, they found themselves near the latitude and longitude of Lord Mayor's Bay of Sir John Ross, in lat. 69° 26′, and on ascending a hill near the coast, Dr. Rae had the satisfaction of finding an ice-covered sea studded with innumerable islands. As he observes—"Lord Mayor's Bay was before me, and the islands were those named by Sir John Ross, the Sons of the Clergy." Dr. Rae had thus the satisfaction of proving the existence of a continuous line of coast from the land N. of Repulse Bay to that part of Boothia Felix where Sir John Ross had terminated his inquiries in this direction.

Returning to Repulse Bay, the expedition again started north to trace the west shore of Melville Peninsula, and proceeded as far as lat. 69° 30′, when the state of the weather and of their provisions compelled them to return.

Arctic Expedition.—It is with regret that I have to repeat the statement of my noble predecessor last year, that we are still without information respecting the progress of the expedition under Sir John Franklin. The Esquimaux whom Dr. Rae fell in with had heard nothing of the exploring ships, it is therefore considered probable that they are somewhere to the north or west of Barrow's Straits; let us hope, however, that before the autumn this question will be set at rest by the return of our long-absent countrymen.

In the mean time it is gratifying to know that the Government, sharing the anxiety of the public to obtain information respecting their position, have adopted the most judicious measures for the purpose.

No less than three expeditions have been undertaken for their relief. Commander Moore, in Her Majesty's ship Plover, has been ordered to proceed through Behring's Straits in search of the missing ships, and is already, we may believe, well advanced towards that point. Sir John Richardson, with Dr. Rae, must by this time be threading his way through the American rapids on his route to the far M'Kenzie River, from whence he will proceed along the coast in search of his friend and former captain. And, thirdly, Sir James Ross and Captain Bird, in the 'Enterprise' and 'Investigator,' will shortly be on their old ground in the neighbourhood of Lancaster Sound, ready to act as circumstances may require. Thus it will be seen, for the consolation of those who have friends on board, that nothing has been omitted on the part of the Government which justice could require or humanity suggest. Nor must I omit to mention the munificent reward of 2000*l.* offered by Lady Franklin for the assistance of the vessels themselves, or the first information respecting them.

Arctic Seas.—Mr. Ch. Martens has published a memoir giving an account, from observations taken on board the corvette 'Recherche,' between Lapland and Spitzbergen, of the temperature of the Arctic Ocean. The observations were taken at the surface, at great depths, and in the neighbourhood of the glaciers of Spitzbergen. The result of these observations is, that the temperature of the ocean at all depths is generally above zero. The influence of the Gulf-stream extends to the western coast of Spitzbergen.

Hudson's Bay.—Some information respecting the manners of the Indians and the geographical features of the country will be found in Mr. Ballantyne's volume, called 'Hudson's Bay, or Every-day Life in the Wilds of North America during Six Years' Residence in the Territories of the Hudson's Bay Company.'

North America.—Sir George Simpson, the Governor-in-Chief of the Hudson's Bay Company's territories, in his Narrative of a Journey round the World, has, in addition to much interesting matter respecting countries already well known, given us some information respecting the regions to the westward of the Rocky Mountains, from the Russian possessions down to California. The Sandwich Islands are also fully described and discussed. The journey round the world was completed by returning home through Siberia and Russia.

United States.—From the Report made to the Secretary of the Treasury of the U.S. by Professor Bache, the Superintendent of the Coast Survey, we learn that the progress of that undertaking during the past year has been highly satisfactory. The work has been extended into eighteen States on the Atlantic and Gulf of Mexico. The results of the survey between New Orleans and Mobile are very important. Great advantage has been derived from the use of steam in the hydrographical part of the work.

The following are some of the results of the proceedings of the past year in the nine sections into which the work is now divided. The primary triangulation has been extended into the southern part of Maine. Astronomical and magnetic observations have been made at one station in New Hampshire and one in Maine. The topography of Boston harbour and its vicinity has been completed from Scituate Light on the S., to Nahant Neck on the N. The hydrography of the shoals near Nantucket has made considerable progress.

In the second section, viz. from Point Judith to Cape Henlopen, observations for difference of longitude by electric telegraph have been successfully made; and Washington city, Philadelphia, and New York are now connected by this novel and exact method, which in many cases will be an important aid in geodetic operations. Observations of tides and currents have been made in Long Island Sound and Delaware Bay. In the third section, the primary triangulation has been continued down the Chesapeake towards the Potomac; and the secondary triangulation of the Chesapeake Bay has been carried on with the primary. In the fifth section, the preliminary reconnaissance of the coast of South Carolina and Georgia has been nearly completed. In the eighth section, a base-line has been measured on Dauphin Island at the entrance of Mobile Bay; the primary triangulation of Mississippi Sound has been extended; and astronomical and magnetic observations have been made at two stations, one at the entrance to Mobile Bay, and one on Mississippi Sound; and finally, in the ninth section, a reconnaissance of the coast of Texas has been commenced from Galveston southward, and a portion of it is so far complete as to admit of beginning the secondary triangulation and the astronomical observations.

The Report itself contains much valuable information respecting the detailed position of the different shoals and ridges discovered in various parts of the survey; also an able Report on the use of the electro-magnetic telegraph for differences of longitude, and the methods employed to detect the time lost, if any, in transmitting the signals, and in measuring the distance between any two places connected by the electric telegraph. In the detailed account of the third section are some valuable observations respecting the temperature of the Gulf-stream; nothing can be more remarkable than the sudden rise from the cold water near the coast to the hot water of the gulf, forming what is called a cold wall confining the stream, the sudden changes according to the variation of the currents are also noticed.

Atlantic Ocean.—Maps and Charts.—Lieutenant Maury, director of the Observatory at Washington, has published Nos. 1, 2, and 3 of the charts of the winds and currents of the Atlantic. The voyage from New York to Rio Janeiro is said to have been reduced from 40 or 50 days to 29, by taking advantage of them. The same officer has also lately published a Report respecting the comparative advantages of the passage of the Isthmus of Darien as a means of direct communication between Europe and China; and he distinctly proves that, for rapid communication with China, the point of departure on the American continent should be Monterey, or some harbour in Upper California. Lieutenant Maury observes that it does not appear that the great circle route across the ocean has ever been considered as bearing upon the question of communication with China. This question cannot be solved by reference to charts or maps, in which the relative positions of places are necessarily distorted, but can only be seen on a terrestrial globe, by which we find that the shortest distance between any two places, not on the equator or on the same meridian, is along the arc of the great circle (of the globe) in the plane of which the places are situated. "If," he says, "we take a common terrestrial globe, and draw a string tightly across it from Panama to Shanghae, it will show the shortest distance between the two places, and will represent the great circle route between them; and this string, so far from touching the Sandwich Islands, will pass through the Gulf of Mexico, thence through Louisiana towards Oregon, crossing the ocean several thousand miles to the N. of these islands. The distance by this route, were it practicable, is 1200 miles shorter than by way of the Sandwich Islands. It is, moreover, a fact that by this route a person at New Orleans is 300 miles nearer to China than when he starts from Panama by way of the Sandwich Islands, although he will have travelled 1500 miles to reach Panama." The numerous advantages pointed out by Lieutenant Maury, and detailed in his letter published in the 'Athenæum' of May 6, 1848, are so great, and the importance of rapid communication between China and the N.W. provinces of America is so manifold, that the project appears to be deserving of serious consideration. It is proposed that it should be completed by a railroad from Memphis to Monterey, one being already commenced from Charleston to Memphis. In the mean time Lieutenant Maury recommends a horse post from Memphis to Monterey. It is unnecessary to point out further the great advantages which would accrue to geography by this rapid communication. As connected with this question, I may state that a paper was read not long ago by Mr. Joseph Glynn before the Institution of Civil Engineers, giving an account of the various plans proposed for connecting the Atlantic and Pacific Oceans by a navigable canal, in which the relative advantages of the three plans, and the parties by whom they have been respectively advocated, were explained:—1, to cross the Isthmus of Tehuantepec; 2, to ascend the river St. John and the Lake of Nicaragua; and, 3, the Isthmus of Panama. The last presents fewest obstacles.

California.—Dr. Coulter has recently published a work in two vols., entitled 'Adventures on the Eastern Coast of South America and in the Interior of California.' Besides the description of the country on the main, the work also contains information respecting many of the groups of islands in the Pacific.

Mexico.—It is to be hoped that the war between the United States and Mexico will lead to the construction of improved maps of many portions of the continent of America hitherto but little known, particularly of the northern and western portions of Mexico and California. Not only do the necessities of war require correct maps, but the mere presence of the American army, with many intelligent engineer officers, must lead to practical results in this respect. In the mean time Mr. G. F. Ruxton, a Fellow of this Society, has published a work entitled 'Adventures in Mexico and the Rocky Mountains,' from which many important facts and much useful geographical information may be gleaned, although written in a light and easy style, without any claim to scientific detail. His descriptions of the wild country through which he passed, and the still wilder inhabitants whom he met with, are animated and lively, and cannot fail to be read with interest.

To a certain extent the war between the United States and Mexico has already rendered some service to geography, for amongst the documents accompanying the last message of the President of the United States to the two Houses of Congress, on the 7th of December, 1847, are many observations respecting the geography of Upper California and Mexico, with maps and plans on a large scale. I regret that I cannot do more than allude thus briefly, on the present occasion, to a volume containing 1600 pages.

West Indies.—I have here to mention Sir R. Schomburgk's work on the History of Barbadoes, published in 1848. Although not entirely geographical, it contains so much matter directly connected with our science, that it deserves honourable mention on this occasion. The first part contains a geographical and statistical description of the island, in which the author enters fully into the climatology and meteorological phænomena of Barbadoes, graphically describing the hurricanes to which it is subject, and concluding with à minute description of the political and local geography of the island. The second part is devoted to the History of Barbadoes from the settlement of the island to the year 1846. It commences with a valuable and interesting description of the early maps of the island. It appears to have been first mentioned under the name of Bernados, in a MS. map of the world now in the British Museum, drawn on vellum, and supposed to have been executed in the time of Francis I., previous to 1536. It was subsequently called Beruados, Baruodo, and Barbudos. The third part contains remarks on the geological structure of the island, with a sketch of its natural productions.

Panama.—Captain Kellett, in the Herald, is continuing the survey of the coast between Panama and California. Great attention is being paid to the Panama portion of the survey, as many rivers come down to the coast from the mountains in the back, whilst others descend from the eastern side. It is stated that the river San Juan runs to within a quarter of a league of the Atrato, a river on the opposite side, navigable for large boats. Such a discovery would go far towards facilitating a passage across the isthmus, and might supersede the unsafe anchorage at Chagres.

In the volumes of Mr. M'Gregor, late Secretary to the Board of Trade, the progress of America is fully developed. It is a work of great compilation and research, bringing together everything known respecting the geography and political history, and moral condition of the people of the different States now established in that vast region.

New Granada.—Maps.—Colonel Joaquin Acosta has lately published the first special map of the republic of New Granada which has yet appeared. It is said to contain many important corrections. Carthagena is placed in 77° 54′ 25″ W. long., instead of 77° 50′; and upwards of one thousand places are fixed, not given in any former maps.

Santa Fe de Bogota.—M. Lewy left France in 1847 to occupy the chair of professor of chemistry and metallurgy at Santa Fe de Bogota; owing to his character and advantageous position, much information is expected from him respecting the physical geography of New Granada. Full instructions have been given him by the French Academy of Sciences to observe latitudes and longitudes, temperature, &c.

Chili.—M. Claude Gay has published, in Spanish, a work on the physical and political history of Chili, the result of twelve years of laborious toil. In this work the geographical features of the country have claimed and obtained a full share of M. Gay's attention. The work is accompanied by an atlas in folio. The geographical distribution of plants has also deeply engaged the attention of the author.

An interesting description of some of the features of the great rivers which traverse the plains of South America will be found in Captain Mackinnon's account of steam-warfare in the Parana, although the work itself does not claim to be classed amongst those of a strictly scientific character.

MISCELLANEOUS.

Ethnography.—The languages and histories of nations are not to be overlooked in detailing the progress of geography; I have therefore considered it my duty to call your attention to the work of Mr. Horatio Hale, philologist of the exploring expedition under Captain Wilkes, U.S.N., on the subject of migrations in the Pacific Ocean. The work is called 'Ethnography and Philology of the U.S. Exploring Expedition,' and appears well deserving of consideration. The whole question of the manners and dialects of the Polynesian races is thoroughly discussed, and the author comes to the conclusion, founded moreover on the labours of Wm. von Humboldt, that the Polynesians belong to the same race as that which peoples the East Indian Islands; many of them, indeed, directly refer their origin to Bouro, the easternmost island of the East Indian Archipelago, inhabited by the yellow Malay race.

Mr. Wm. Hughes has published a small pamphlet, entitled 'Remarks on Geography as a Branch of Popular Education, chiefly with reference to the principles on which it should be taught in Normal Schools.'

Earthquakes.—In the 25th volume of the 'Comptes Rendus' will be found an account of an earthquake felt at Copaipo (Chili), 19th January, 1847; also of an earthquake felt at Fécamp, 10th July, 1847.

Some interesting details respecting earthquakes were mentioned at the meeting of the British Association at Oxford last year, amongst which was a report on the theory of earthquake movements, by W. Hopkins, Esq.

Mr. Mallet, of Dublin, has also contributed much information on the same subject, and is now engaged in a series of experiments to solve some of the important questions respecting the undulations of the waves which accompany these phænomena.

Professor Savi, of Pisa, has also published a work on the phænomena observed during the earthquakes of Tuscany in August, 1846.

Professor Noeggerath, of Bonn, has published a collection of all the details respecting the earthquakes felt in Germany in July, 1846, from which he has calculated the focus of those shocks to have been situated on the Rhine between Bingen and Coblenz.

Hakluyt Society.—It would be a serious omission on such an occasion as the present, and in these rooms, not to call your attention to a Society which belongs so especially to our science as the Hakluyt. Although we do not expect novelties or discoveries from them, they are yet capable of conferring great benefit on our pursuits by their republication and translations of old works of travels now out of print, or only to be met with in foreign languages. I may mention that they have already published, 1, 'The Observations of Sir Richard Hawkins, Knight, on his Voyage into the South Sea in the year 1593,' and, 2, 'A Translation of Select Letters of Christopher Columbus, with other Original Documents, relating to his Four Voyages to the New World.'

Geographical Distribution of Plants, &c.—Besides the notice on this subject published by C. Ritter, in his 'Erdkunde v. Asien,' respecting the coffee plant and the date palm, I must mention that Mr. H. C. Watson has also published an elaborate work on the geographical distribution of British plants, entitled 'Cybele Britannica, or British Plants and their Geographical Relations.' His work, although confined to a small portion of the earth's surface, is valuable inasmuch as it points out how much there is to be done on this subject, one so intimately connected with physical geography, and to which the attention of A. Von Humboldt and others has been so successfully directed.

Geographical Nomenclature.—Our late Secretary, Colonel Jackson, has addressed a letter to M. Jomard on the important question of simplifying geographical nomenclature; entirely coinciding in the views already put forth by that writer. Of the importance of such a measure there cannot be a second opinion, the inconvenience of the present system is self-evident, when each country adopts peculiar forms and measurements, different terms and methods of description, and when even the writers of one country do not all agree in the expressions intended to define certain positive facts; it is not difficult to imagine the discrepancies which must constantly arise, not to say the impossibility of reducing their observations to one common form. But it is easier to point out the evil than to devise a remedy, and I fear the aspirations of those who recommend these measures, will be deferred until we enjoy the advantage of one common language and one universal form of a monetary system.

CONCLUSION.

Having thus endeavoured to lay before you a comprehensive view of the progress of our science during the past year, I cannot but feel conscious that, notwithstanding the length to which it has extended, I have made many serious omissions, and that much remains to be said upon some of the most important subjects of our science in its higher and more scientific branches, such as the progress of magnetism and meteorology, terrestrial physics and astronomy, all of which are now brought within the immediate province of the geographer, and are become some of his chief qualifications ; but they require to be dealt with by a master hand. Much also remains to be said respecting the application of geography to the moral wants and political and social education of mankind. It would be a serious evil to imagine, as I fear however is the case with many, that the science and aspirations of geography are completed, when we have attained a perfect delineation of all the continents and oceans of the globe, with their bays and islets, their rivers and their mountains, and have correctly fixed the position of all those physical features which constitute the surface of our earth. Such, indeed, is but the commencement of our labour. The most correct and perfect maps are but the skeleton or groundwork of our science, taken in the higher and more extended sense in which we wish to see it cultivated. Its application to the progress and development of civilization, and of the animal and vegetable productions of the earth, to the distribution of the different races of the human family, and the various combinations which have arisen from their repeated intercourse, are subjects of the highest consequence, and for the clear understanding of which our maps and charts can only serve as the foundation-stone. No doubt the commercial intercourse of mankind is facilitated and kept up by these maps and charts; but we aim at a higher object, viz., the improvement of man's moral culture by a more extended knowledge of the various productions of different climes, and by bringing before him on a large tabular scale the moral and physical condition of his race. To such purposes as these, maps have, with few exceptions, been as yet but rarely applied ; but the movement has begun, and let us hope that the object will now not be lost sight of. That the Royal Geographical Society of London should assist in promoting such an object must be the first wish of its friends and its supporters. But to do this, its influence must be extended, its members must be increased, the sphere of its utility must be enlarged. The colonies and possessions of Great Britain extend to every quarter of the globe. Her ships navigate every shore, and her sons are foremost to explore every corner of the globe. In no country, then, are there such facilities for amassing and collecting geographical information. Let us hope that the Royal Geographical Society, encouraged as it must be by the practical and positive evidences of public support, will speedily find the means of arranging and systematising this mass of information in such a manner as to meet the requirements of the public, and to fulfil, in part at least, the original intentions of its founders.